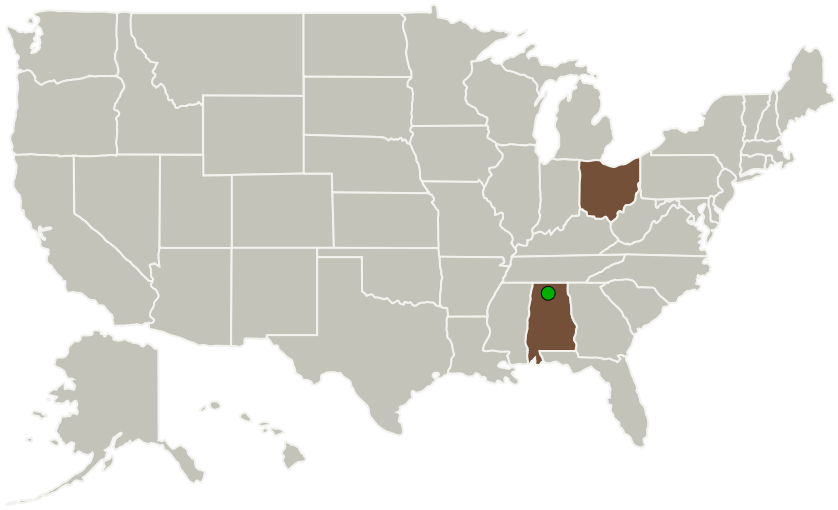
Improved Metal-Polymeric Laminate Radiation Shielding, Phase II

Completed Technology Project (2011 - 2013)

Project Introduction

In this proposed Phase II program, builds on the phase I feaibility where a multifunctional lightweight radiation shield composite was developed and fabricated. This structural radiation shielding is high strength, syntactic polymeric where the polymer is filled with high strength low Z material. The phase II program will provide radiation modeling and testing for these new structural radiation solutions as well as a physical property database for using them in space habitats. The Phase II program will address issues including flammability, attachment, and incorporation of these new materials into existing and future space habitat designs. The accumulation of the phase II program will be prototype components that can be tested at TRL level 5 or flown for TRL level 6.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Powdermet, Inc.	Lead Organization	Industry	Euclid, Ohio
Marshall Space Flight Center(MSFC)	Supporting Organization	NASA Center	Huntsville, Alabama

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Primary U.S. Work Locations	
Alabama	Ohio

Project Transitions

June 2011: Project Start

November 2013: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/138974)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Powdermet, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

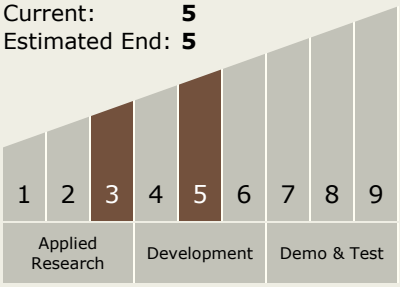
Carlos Torrez

Principal Investigator:

Brian Doud

Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



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Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  - TX12.1 Materials
    - TX12.1.6 Materials for Electrical Power Generation, Energy Storage, Power Distribution and Electrical Machines

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System